

### ABSTRACT OF THE DISCLOSURE

The present invention provides for sequential chemical vapor deposition by employing a reactor operated at low pressure, a pump to remove excess reactants, and a line to introduce gas into the reactor through a valve. A first reactant forms a monolayer on the part to be coated, while the second reactant passes through a radical generator which partially decomposes or activates the second reactant into a gaseous radical before it impinges on the monolayer. This second reactant does not necessarily form a monolayer but is available to react with the monolayer. A pump removes the excess second reactant and reaction products completing the process cycle. The process cycle can be repeated to grow the desired thickness of film.

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